

FORM PTO-1390 (REV 12-29-99)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 41165/9014	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 09/622306	
INTERNATIONAL APPLICATION NO. PCT/DE99/00467		INTERNATIONAL FILING DATE 16 February 1999		PRIORITY DATE CLAIMED 20 February 1998	
TITLE OF INVENTION DEVICE FOR CONVERTING THE MAINS VOLTAGE INTO A LOWER VOLTAGE					
APPLICANT(S) FOR DO/EO/US BOTHE, Michael					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. 3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1). 4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). 6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). 7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> have been transmitted by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input checked="" type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). 					
Items 11. to 16. below concern document(s) or information included:					
<ol style="list-style-type: none"> 11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13. <input checked="" type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 14. <input type="checkbox"/> A substitute specification. 15. <input type="checkbox"/> A change of power of attorney and/or address letter. 16. <input checked="" type="checkbox"/> Other items or information: Postcard and Check 					

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)

09/622306

INTERNATIONAL APPLICATION NO.
PCT/DE99/00467ATTORNEY'S DOCKET NUMBER
41165/901417. ☒ The following fees are submitted:**BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :**

Neither international preliminary examination fee (37 CFR 1.482)
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO
and International Search Report not prepared by the EPO or JPO \$970.00

International preliminary examination fee (37 CFR 1.482) not paid to
USPTO but International Search Report prepared by the EPO or JPO \$840.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but
international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$690.00

International preliminary examination fee paid to USPTO (37 CFR 1.482)
but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$670.00

International preliminary examination fee paid to USPTO (37 CFR 1.482)
and all claims satisfied provisions of PCT Article 33(1)-(4) \$96.00

ENTER APPROPRIATE BASIC FEE AMOUNT =**CALCULATIONS** PTO USE ONLY

\$ 840.00

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☒ 30
months from the earliest claimed priority date (37 CFR 1.492(e)).

\$ 130.00

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total claims	10 - 20 =	0	X \$18.00
Independent claims	1 - 3 =	0	X \$78.00

\$ 0.00

\$ 0.00

MULTIPLE DEPENDENT CLAIM(S) (if applicable)

+ \$260.00

\$ 0.00

TOTAL OF ABOVE CALCULATIONS =

\$ 970.00

Reduction of 1/2 for filing by small entity, if applicable. A Small Entity Statement
must also be filed (Note 37 CFR 1.9, 1.27, 1.28).

\$ 0.00

SUBTOTAL =

\$ 970.00

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30
months from the earliest claimed priority date (37 CFR 1.492(f)).

\$ 0.00

TOTAL NATIONAL FEE =

\$ 970.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be
accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property

\$ 0.00

TOTAL FEES ENCLOSED =

\$ 970.00

Amount to be
refunded:

\$

charged:

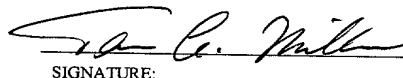
\$

- a. ☒ A check in the amount of \$ 970.00 to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees.
A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any
overpayment to Deposit Account No. 13-3080. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR
1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Thomas A. Miller
Michael Best & Friedrich LLP
100 East Wisconsin Avenue
Milwaukee, WI 53202-4108



SIGNATURE:

Thomas A. Miller

NAME

36,871

REGISTRATION NUMBER

09/622306

534 Rec'd PCT/PTO 15 AUG 2000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Group Art Unit _____

In re

Patent Application of

Michael Bothe

Serial No. _____

Filed: _____

I, Kim Zingler, hereby certify that this correspondence is being deposited with the US Postal Service as first class mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231, on the date of my signature.

Kim Zingler
Signature
8/15/00
Date of Signature

“DEVICE FOR CONVERTING THE MAINS
VOLTAGE INTO A LOWER VOLTAGE”

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

Prior to calculating the fee, please amend the application as follows:

In the Specification:

On page 1, line 4, after “consumer” insert --, i.e., any electronic device such as, for example, a consumer electronic device,--.

In the Claims:

1. Device for transforming the main supply [mains] voltage into a lower voltage, comprising a first connector that can be plugged into a mains socket, a second connector that can be plugged into a consumer and an electronic circuit for transforming the voltage which is located between the two connectors, and wherein

[characterized in that] the electronic circuit forms with the second connector (2) one rigid physical unit whereby the connection between the electronic circuit and second connector (2) is as short as possible and has a low electric resistance.

2. Device according to claim 1, and further comprising [characterized in that] an ON/OFF switch (5) [is provided] for switching the line voltage.

3. Device according to claim 1, wherein [one of the claims 1 or 2, characterized in that] the second connector (2) has at least three poles.

4. Device according to claim 1, and further comprising [one of the claims 1 to 3, characterized in that at the same] an indicator (4) for indicating the operational state of the device [is provided].

5. Device according to claim 1, wherein [one of the claims 1 to 4, characterized in that] the second connector (2) can be removed from the rest of the unit easily and can be changed by another connector if necessary.

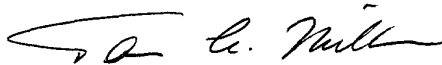
6. Device according to claim 1, wherein [one of the claims 1 to 5, characterized in that] the first connector (1) is connected with the rest of the unit via an electric line.

7. Device according to claim 6, characterized in that this line has a third connector, that can be removed from the unit.

8. Device according to claim 1, wherein [one of the claims 1 to 5, characterized in that] the unit is built into a case (3).

9. Device according to claim 1, wherein [one of the claims 1 to 8, characterized in that] the unit and/or the consumer are provided with elements that ensure a secure fastening of the unit at the consumer.

Respectfully submitted,



Thomas A. Miller
Reg. No. 36,871

Docket No.: 41165/9014
Michael Best & Friedrich LLP
100 East Wisconsin Avenue
Milwaukee, Wisconsin 53202-4108
(414) 271-6560

T:\CLIENTA\41165\9001\A0034079

534 Rec'd PCT/PTO 15 AUG 2000

Device for Converting the Mains Voltage into a Lower Voltage

The invention relates to a device that transforms mains voltage (generally 230 volts) into low voltage (generally a so-called "safety low voltage") and that consists of a first connector to be plugged into the mains socket, a second connector to be plugged into a consumer and an electronic circuit for the voltage transformation which is between those two connectors.

In conventional, commercially available devices of this kind, the electronic circuit is connected with the second connector via an electric line of considerable length, e.g. two meters. This solution has the disadvantage that in this line significant and often undesirable losses can occur. Moreover, it can happen that the line is overloaded.

The problem underlying the invention is to construct the above described device in a way that losses and line overload can be avoided as far as possible.

According to the invention this problem is solved by a construction where the electronic circuit forms with the second connector, one rigid physical unit where the electric connection between the circuit and the second connector is as short as possible and shows a low electric resistance.

Thus, losses and line overload can be avoided to a large extent, the latter because the cross-section of a short built-in connection can be made large enough more easily than in the case of a long, open connecting cord that would become too bulky.

A further advantage can be seen in the fact that additional signals (via additional electric connection) can be transmitted more easily as in the case of conventional devices, because the device according to the invention lacks the long connecting line of the conventional device.

According to a further embodiment of the invention an ON/OFF switch for the line voltage is provided at the device. This solution has, compared to an ON/OFF switch provided at a conventional mains transformer the advantage that it can be used more easily when the consumer has to be switched off. An ON/OFF switch provided at a conventional mains transformer very often is not used because the transformation device is located at a location remote from the consumer which is not easily accessible or is not visible. In many cases the consumer is not switched off and thus wastes energy or the mains plug

is simply removed from the socket. Out of this reason, the conventional devices very often are not provided with an ON/OFF switch at all.

It is further suggested, that the second connector has at least three poles. This is necessary for the transmission of additional signals.

Additionally, it is suggested that the device is provided with an indicator for the operating state.

Finally, it is suggested that the second connector can be removed from the rest of the unit and can, if necessary, be exchanged by another connector. Thus, it is possible to adapt the device according to the invention to different consumers in a comfortable way.

Further details of the invention result from the attached drawings.

Figures 1 and 2 each show a conventional mains transformer.

Figure 3 illustrates a preferred embodiment of a mains transformer according to the invention.

In all three figures, numeral 1 signifies a mains plug ("first connector") numeral 2 a second connector, that can be plugged into a consumer, numeral 3 a case where a voltage transforming electric circuit is built in, numeral 4 an indicator for the operation state and numeral 5 an ON/OFF switch.

Claims

1. Device for transforming the mains voltage into a lower voltage, comprising a first connector that can be plugged into a mains socket, a second connector that can be plugged into a consumer and an electronic circuit for transforming the voltage which is located between the two connectors,

characterized in

that the electronic circuit forms with the second connector (2) one rigid physical unit whereby the connection between the electronic circuit and second connector (2) is as short as possible and has a low electric resistance.

2. Device according to claim 1, **characterized in** that an ON/OFF switch (5) is provided for switching the line voltage.
3. Device according to one of the claims 1 or 2, **characterized in** that the second connector (2) has at least three poles.
4. Device according to one of the claims 1 to 3, **characterized in** that at the same an indicator (4) for the operational state is provided.
5. Device according to one of the claims 1 to 4, **characterized in** that the second connector (2) can be removed from the rest of the unit easily and can be changed by another connector if necessary.
6. Device according to one of the claims 1 to 5, **characterized in** that the first connector (1) is connected with the rest of the unit via an electric line.
7. Device according to claim 6, **characterized in** that this line has a third connector, that can be removed from the unit.
8. Device according to one of the claims 1 to 5, **characterized in** that the unit is built into a case (3).
9. Device according to one of the claims 1 to 8, **characterized in** that the unit and/or the consumer are provided with elements that ensure a secure fastening of the unit at the consumer.

10. Device according to claim 9, **characterized in** that the connector pin(s) of the second connector and the respective socket(s) in the consumer are constructed for correctly fastening the unit.

Abstract

The invention relates to a device for converting the mains voltage into a lower voltage, consisting of a first connector that can be plugged into a mains socket, a second connector that can be plugged into a consumer and an electronic circuit, which is located between the two connectors and transforms the voltage. The main idea of the invention is that the electronic circuit forms with the second connector (2) one rigid physical unit whereby the connection between the circuit and the second connector (2) is as short as possible and exhibits a low electric resistance. Thus, losses and line overloads can be reduced.

Patent Attorney

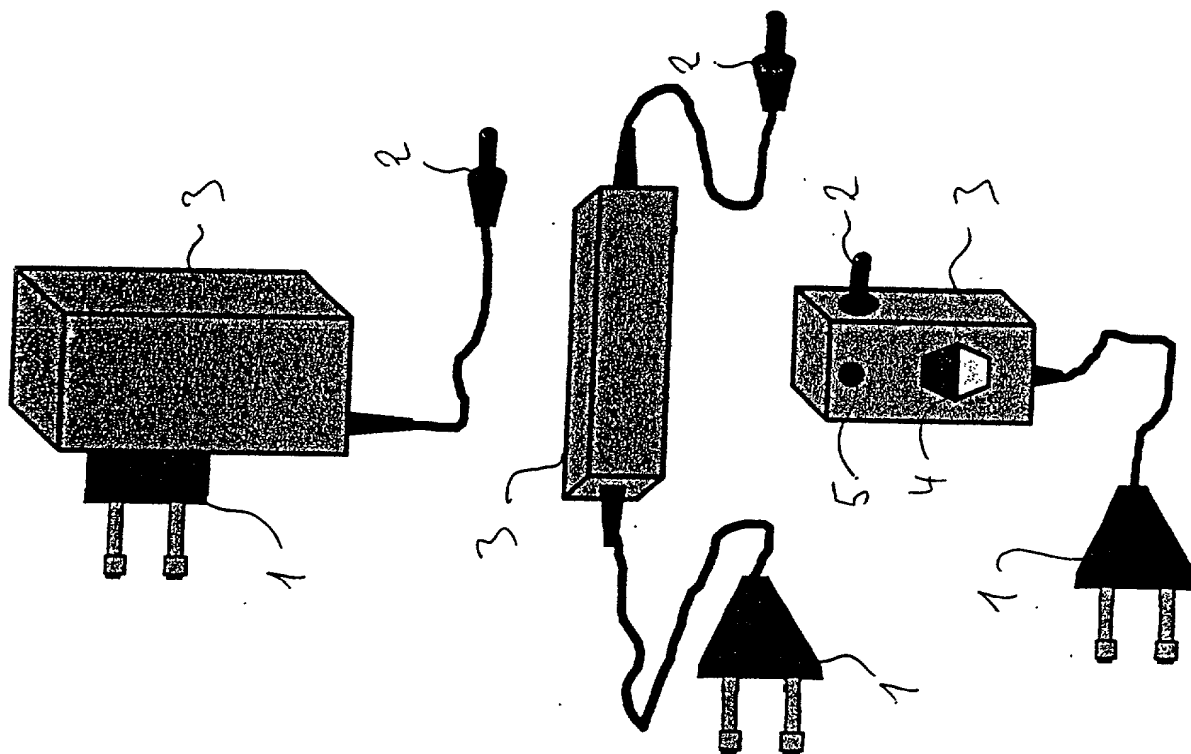


Fig 1.

Fig 2.

Fig 3.

Declaration and Power of Attorney For Patent Application

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled **DEVICE FOR CONVERTING THE MAINS VOLTAGE INTO A LOWER VOLTAGE** (Attorney Docket No. 41165/9014), the specification of which was filed with my authority, on August 15, 2000 as Application Serial No. 09/622,306.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims referred to above.

I acknowledge the duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

As a named inventor, I hereby appoint the following registered practitioners to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Customer Number

23409



23409

PATENT TRADEMARK OFFICE

DIRECT ALL COMMUNICATIONS IN OR PERTAINING TO THIS APPLICATION TO:

Customer Number

23409



23409

PATENT TRADEMARK OFFICE

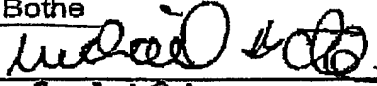
I hereby claim foreign priority benefits under Title 35, United States Code, §119 of the foreign application for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

	Prior Foreign Application	
19808089.1	DE	20 February 1998
PCT/DE99/00467	PCT	16 February 1999
(Number)	(Country)	(Day/Month/Year Filed)

The undersigned to this Declaration and Power of Attorney hereby authorize the U.S. attorneys named herein to accept and follow instructions from Grunecker, Kinkeldey, Stockmair & Schwanhauser, Maximilianstr. 58, D-80538 Munchen Germany as to any actions to be taken in the U.S. Patent and Trademark Office regarding this application without direct communication between the U.S. attorneys and the undersigned. In the event of a change in the person(s) from whom instructions may be taken, the undersigned will so notify the U.S. attorneys.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of inventor: Michael Bothe

Inventor's signature 

Date: 23.12.01

Residence: Münster, Germany DEX

Citizenship: German

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